SERVICE MANUAL
Level 1&2

NOKIA 7370

RM-70

Transceiver characteristics:

Band: Tri-band phone for GSM 900/1800/1900MHz

Camera: 1,3 Mega pixel camera with full screen landscape camera mode

Display: QVGA display with 262.144 colors, resolution 320 x 240 pixel

Bluetooth

FM radio

Audio: 2 IHF speaker for 3D-stereo sound effects

Connector: Pop Port connector

Transceiver with BL-4b 700mAh Li-Ion battery pack

Talk time	Standby	Note
up to 4h	up to 11days	Depends on network parameters

Environmental characteristics:

- Lead-free soldered

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CHANGE HISTORY

Status	Version No.	Date	Comments
Draft	0.1	10.10.2005	Initial draft
Approved	1.0	21.11.2005	Approved

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1. INTRODUCTION

The purpose of this document is to help NOKIA service levels 1 and 2 workshop technicians to carry out service to NOKIA products. This Service Manual is to be used only by authorized NOKIA service suppliers, and the content of it is confidential. Please note that NOKIA provides also other guidance documents (e.g. Service Bulletins) for service suppliers, follow these regularly and comply with the given instructions.

While every endeavor has been made to ensure the accuracy of this document, some errors may exist.
If you find any errors or if you have further suggestions, please notify NOKIA using the address below:
mailto:cc-ts-rc.documentation@nokia.com

Please keep in mind also that this documentation is continuously being updated and modified, so watch always out for the newest version.

Warnings and Cautions

Please refer to the phone's user guide for instructions relating to operation, care and maintenance including important safety information. Note also the following:

Warnings:

1. CARE MUST BE TAKEN ON INSTALLATION IN VEHICLES FITTED WITH ELECTRONIC ENGINE MANAGEMENT SYSTEMS AND ANTI–SKID BRAKING SYSTEMS. UNDER CERTAIN FAULT CONDITIONS, EMITTED RF ENERGY CAN AFFECT THEIR OPERATION. IF NECESSARY, CONSULT THE VEHICLE DEALER/MANUFACTURER TO DETERMINE
2. THE IMMUNITY OF VEHICLE ELECTRONIC SYSTEMS TO RF ENERGY.THE HANDPORTABLE TELEPHONE MUST NOT BE OPERATED IN AREAS LIKELY TO CONTAIN POTENTIALLY EXPLOSIVE ATMOSPHERES EG PETROL STATIONS (SERVICE STATIONS), BLASTING AREAS ETC.
3. OPERATION OF ANY RADIO TRANSMITTING EQUIPMENT, INCLUDING CELLULAR TELEPHONES, MAY INTERFERE WITH THE FUNCTIONALITY OF INADEQUATELY PROTECTED MEDICAL DEVICES. CONSULT A PHYSICIAN OR THE MANUFACTURER OF THE MEDICAL DEVICE IF YOU HAVE ANY QUESTIONS. OTHER ELECTRONIC EQUIPMENT MAY ALSO BE SUBJECT TO INTERFERENCE.

Cautions:

1. Servicing and alignment must be undertaken by qualified personnel only.
2. Ensure all work is carried out at an anti–static workstation and that an anti–static wrist strap is worn.
3. Use only approved components as specified in the parts list.
4. Ensure all components, modules screws and insulators are correctly re–fitted after servicing and alignment.
5. Ensure all cables and wires are repositioned correctly.

Electrostatic discharge can easily damage the sensitive components of electronic products. Therefore every Service Supplier has to take care of all precautions, which are mentioned in the service level related "Service Partner Requirements", available on NOKIA Online. Also see ESD Protection Requirements in this Service Manual.

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2. GENERAL REPAIR INFORMATION

In this section the technician will get some general hints how to carry out repairs:

- To familiarize oneself with NOKIA product read the tutorials or user guide on www.nokia.com -->Support--> Phones, by selecting the Phone Model.
- Before starting the repair you must take care of ESD precautions like being in your ESD Protected Area and connecting your wristband.
- Use gloves to avoid corrosion and fingerprints.
- Protect windows and displays with a film to avoid dust and scratches.
- When cleaning the LCD Module any lint-free cloth can be used (e.g. Micro-Fibre cloth).
- When cleaning the pads you have to use a soft cloth/ESD brush and Isopropanol. It is not allowed to use a glass fiber pencil because it scratches the surface and will lead later on to corrosion.
- Mechanical parts (except shielding lids and bent parts), which didn't repair the failure, can be reused, if they are not soldered.
- When removing the shielding lids make sure to replace them with new ones, otherwise the high-frequency leakage can have an influence on the device.
- Always use original NOKIA spare parts.
- Check the soldering joints of the parts, which are concerned regarding the indicated error (e.g. soldered connectors or switches) and resolder them if necessary (Level 2 only).
- Remove redundant soldering flux after repair.
- Meet the torque requirements when assembling the unit (see also the document "torques for transceiver assembly" on NOKIA Partner Web Site/NOKIA Online).
- Always use your own equipment for testing where you are sure that it works. E.g. if the customer complains about charger function, please test the phone with your own charger to be sure if phone or charger causes the malfunction.
- A SIM card is needed for all GoNoGo tests.
- When doing the fault log entries, always note the Item code, which caused the malfunction. Also, fill in the appropriate part code from the assembly, if needed.
- Please be aware that some malfunctions could be software related and solved by an update.

- There are several documents available on NOL, which have to be followed:
-
- First, take care for the latest content pages of Service Bulletins, which are always available for each folder on NOKIA Online. This is also important to recognize, if existing documents have become invalid.
-
- The service level indicator at the bottom of each document tells the appropriate destination.

Downloads > Support Library >

1. Instructions
2. General Service Bulletins
3. Product related documents
4. Spare Part Service Bulletins
5. Service Tools Service Bulletins
6. Common Software Service Bulletins
   etc,...

Use General SB-217 as a reference or overview.

Please also check NOKIA Online (NOL) for latest news and files on a regular basis.

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3. PATHFINDER FOR WORKSHOP STAFF

In addition to the information in this Service Manual, there are several instructions and information, which have to be followed. Main documentation database is NOKIA Online with the purpose of serving different multimedia content, like video clips or interactive tutorials.

It is mandatory to watch for newest technical and organizational information on a daily basis to be updated as required (see **"Latest files in Support Library"**). Every new information has to be processed and implemented as soon as possible. When logged into NOL you can also find needed information in different folder like:

Support Library → **Phones** →
Service Manuals
Service Bulletins
Software
Repair Information

Level 1&2 e-learning (former NOKIA CarePoint) on NOKIA Online

Former NOKIA CarePoint content, such as	• **Online Troubleshooting** • **Product information** • **Videos – Disassembly/Assembly**	can be found on **NOKIA Online**
		NOKIA Online ↓ **Care Services** ↓ **Training** ↓ **Phone Models**

Level 1&2 e-learning courses offer a quick overview of the NOKIA phone and support for how to repair and use the phone:

Overview & Guides	**Disassembly & Assembly**	**Troubleshooting**
Basic information about the phone, features and technologies	Instructions how to disassemble and assemble the phone	Step-by-step instructions on how to locate and repair the most common problems with the phone

To reduce the server traffic it is recommended to download newest version of huge files like videos, Phoenix packages or Service Manuals only once and distribute it internally for further use.

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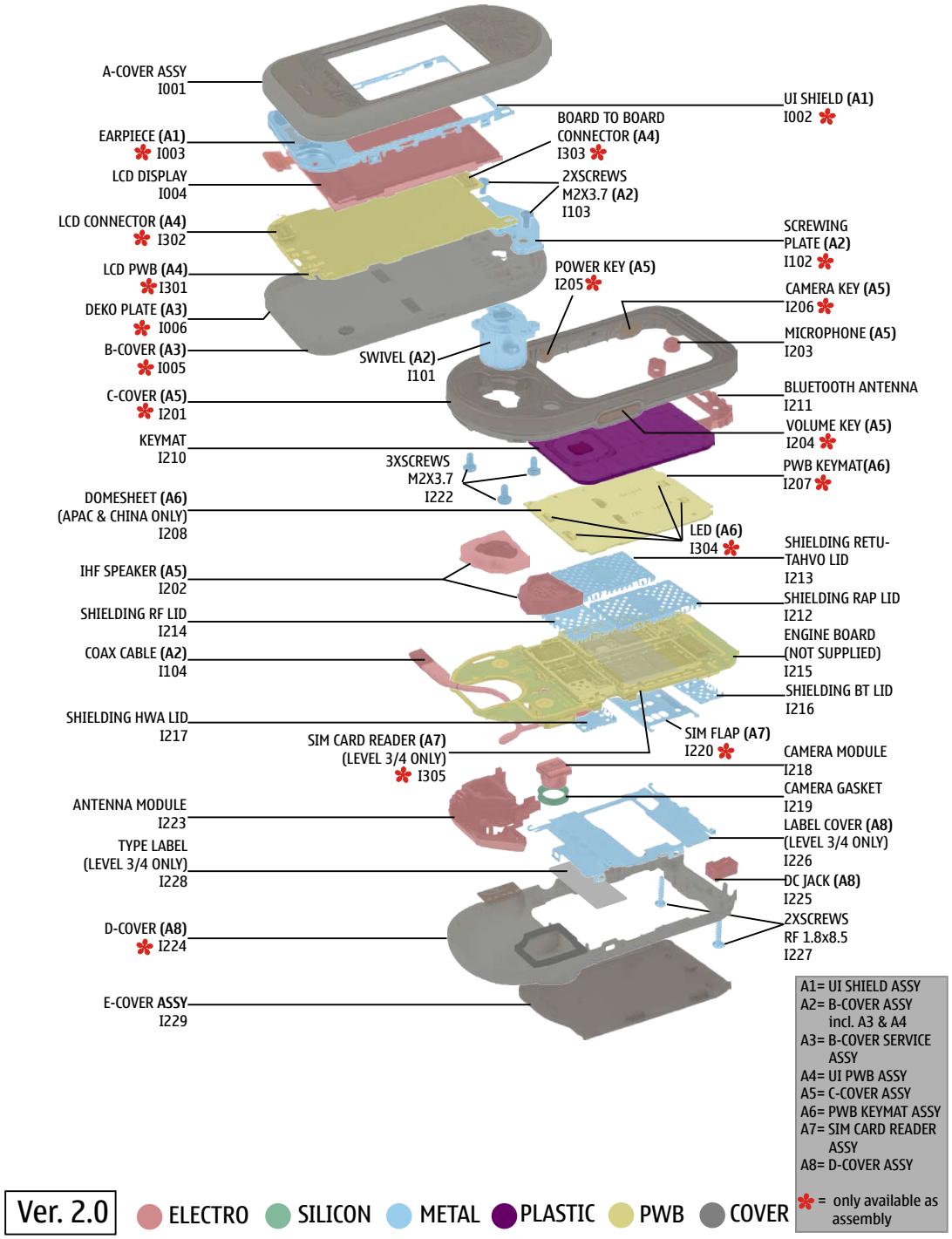
4. EXPLODED VIEW AND COMPONENT DISPOSAL

Recommendation for the ecologically friendly disposal of components. Colorized components show the different categories. See corresponding ITEM/CIRCUIT REF in the Spare Parts Service Bulletins on NOL.

Exploded view 7370 RM-70


A-COVER ASSY I001
EARPIECE (A1) * I003
LCD DISPLAY I004
LCD CONNECTOR (A4) * I302
LCD PWB (A4) * I301
DEKO PLATE (A3) * I006
B-COVER (A3) * I005
C-COVER (A5) * I201
KEYMAT I210
DOMESHEET (A6) (APAC & CHINA ONLY) I208
IHF SPEAKER (A5) I202
SHIELDING RF LID I214
COAX CABLE (A2) I104
SHIELDING HWA LID I217
ANTENNA MODULE I223
TYPE LABEL (LEVEL 3/4 ONLY) I228
D-COVER (A8) * I224
E-COVER ASSY I229
UI SHIELD (A1) I002 *
BOARD TO BOARD CONNECTOR (A4) I303 *
2XSCREWS M2X3.7 (A2) I103
SCREWING PLATE (A2) I102 *
POWER KEY (A5) I205 *
CAMERA KEY (A5) I206 *
MICROPHONE (A5) I203
SWIVEL (A2) I101
BLUETOOTH ANTENNA I211
VOLUME KEY (A5) I204 *
3XSCREWS M2X3.7 I222
PWB KEYMAT(A6) I207 *
LED (A6) I304 *
SHIELDING RETU-TAHVO LID I213
SHIELDING RAP LID I212
ENGINE BOARD (NOT SUPPLIED) I215
SHIELDING BT LID I216
SIM CARD READER (A7) (LEVEL 3/4 ONLY) * I305
SIM FLAP (A7) I220 *
CAMERA MODULE I218
CAMERA GASKET I219
LABEL COVER (A8) (LEVEL 3/4 ONLY) I226
DC JACK (A8) I225
2XSCREWS RF 1.8x8.5 I227
A1= UI SHIELD ASSY
A2= B-COVER ASSY incl. A3 & A4
A3= B-COVER SERVICE ASSY
A4= UI PWB ASSY
A5= C-COVER ASSY
A6= PWB KEYMAT ASSY
A7= SIM CARD READER ASSY
A8= D-COVER ASSY
* = only available as assembly
Ver. 2.0
ELECTRO
SILICON
METAL
PLASTIC
PWB
COVER

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5. SPARE PARTS OVERVIEW

Spare Parts overview 7370 RM-70
A1 = UI SHIELD ASSY
EARPIECE (A1) I003
UI SHIELD (A1) I002
LCD DISPLAY I004
A2 = B-COVER ASSY
A3 = B-COVER SERVICE ASSY
DEKO-PLATE (A3) I006
B-COVER (A3) I005
SCREWING PLATE (A2) I102
2XSCREWS M2X3.7 (A2) I103
SWIVEL (A2) I101
COAX CABLE (A2) I104
A4 = LCD PWB ASSY
BOARD TO BOARD CONNECTOR (A4) I303
LCD PWB (A3) I301
LCD CONNECTOR (A4) I302
A6 = PWB KEYMAT ASSY
PWB KEYMAT (A6) I207
LED (A6) I304
DOMESHEET (A6) (APAC & CHINA ONLY) I208
KEYMAT I210
A5 = C-COVER ASSY
C-COVER (A5) I201
IHF SPEAKER (A5) I202
POWER KEY (A5) I205
VOLUME KEY (A5) I204
CAMERA KEY (A5) I206
MICROPHONE (A5) I203
A8 = D-COVER ASSY
D-COVER (A8) I224
DC JACK (A8) I225
LABEL COVER (A8) (Level 3/4 ONLY) I226
BLUETOOTH ANTENNA I211
3XSCREWS M2X3.7 I222
2XSCREWS RF 1.8x8.5 I227
ANTENNA MODULE I223
A-COVER ASSY I001
E-COVER ASSY I229
ENGINE BOARD (NOT SUPPLIED) I215
SHIELDING RF LID I214
CAMERA MODULE I218
CAMERA GASKET I219
SHIELDING RETU-TAHVO LID I213
TYPE LABEL (LEVEL 3/4 ONLY) I228
A7 = SIM CARD READER ASSY
SIM CARD READER (A7) (LEVEL 3/4 ONLY) I305
SIM FLAP (A7) I220
SHIELDING HWA LID I217
SHIELDING RAP LID I212
SHIELDING BT LID I216
A1= UI SHIELD ASSY
A2= B-COVER ASSY incl. A3 & A4
A3= B-COVER SERVICE ASSY
A4= UI PWB ASSY
A5= C-COVER ASSY
A6= PWB KEYMAT ASSY
A7= SIM CARD READER ASSY
A8= D-COVER ASSY
= only available as assembly
Ver. 2.0

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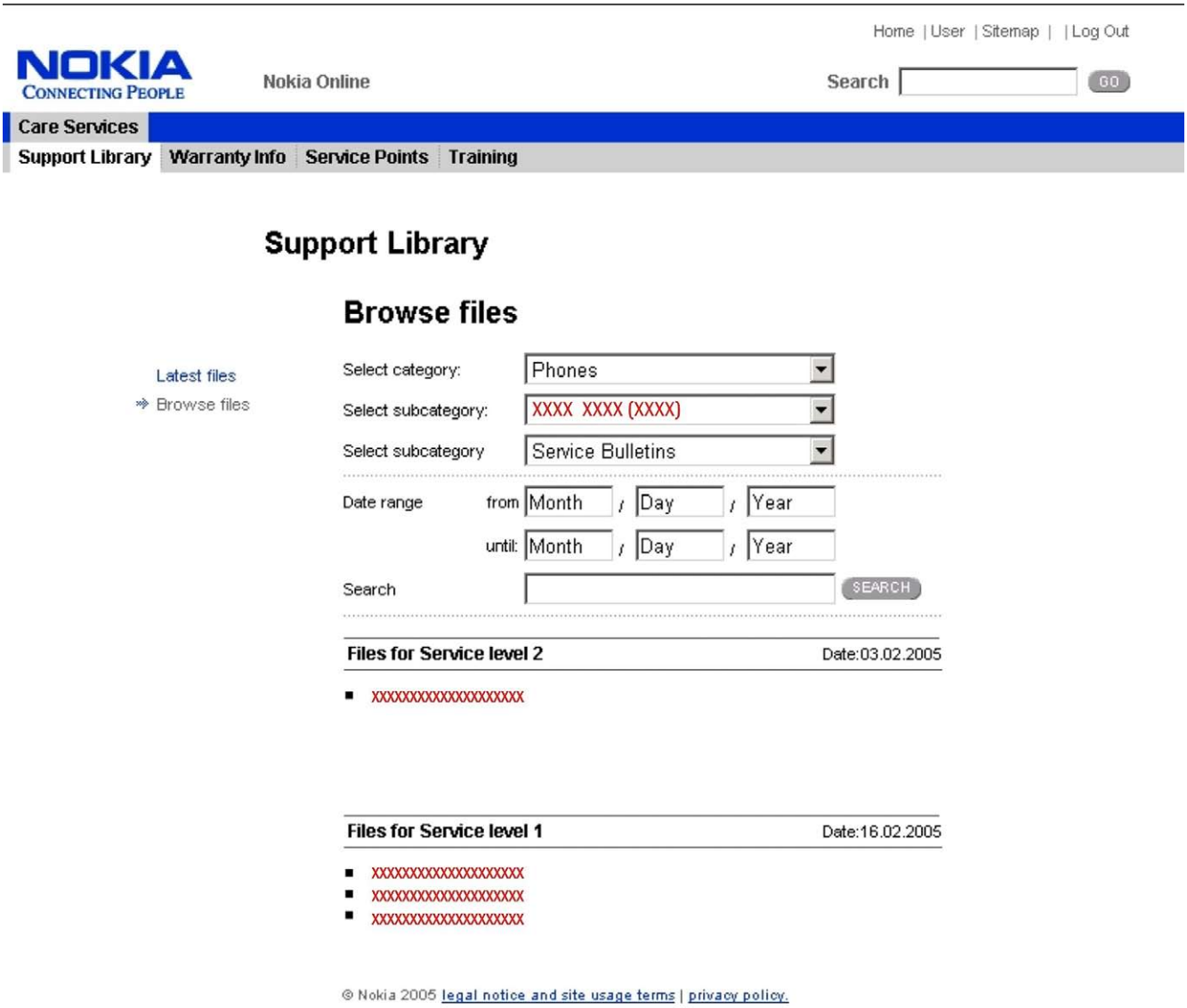
6. SPARE PARTS LIST

Please exchange this page (placeholder) with latest corresponding Service Bulletins (spare parts, SWAP units and service tools) from NOL!

This will ensure, that you are using up-to-date order codes only.

Therefore Service Bulletins have to be checked from NOL on daily basis.



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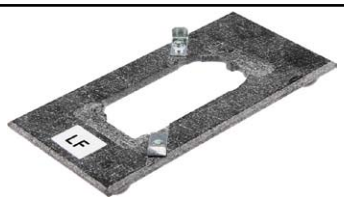
7. SERVICE TOOLS

	FLS-4S incl. ACF-8, Driver and User Guide Dongle and flash device incorporated into one package, developed specifically for POS use.
	ACF-8 Universal Power Supply is used to power FLS-4S.
	Travel Charger AC-4 Small and lightweight charger for fast charging of your phone battery.
	Internal Battery BL-4b Inserted under the back cover, this Li-Ion 700 mAh battery provides power in a lightweight package.
	Headset HS-31 The Nokia Fashion Stereo Headset provides a convenient handsfree facility and the pleasure of listening to your compatible Nokia phone's FM radio or MP3 player in stereo.
	SS-45 Camera removal tool. Metal side is for disassembly, the plastic side for assembly.
	**RJ-68** Soldering Jig

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	Lead-free Solder Wire Mandatory for lead-free products (Level 2 only).
	0772040 NMP Standard Toolkit • NOKIA opening tool SRT-6 NOKIA No. 0770431 • Tonichi torque driver NOKIA No. 6901525 • Hoya micro Fibre cloth MX304 • Dastex gloves S, M, XL • Artilux goggles AH166 • Wera bit T5 867/4TX 5x50 • Wera 867/4 6IP; 50mm (Torx 6 PLUS®) • Wera bit T6 867/4TX 6x50 • Wera 867/1 5IP; 25mm (Torx 5 PLUS®) • Wera bit T6 PLUS® 867/4TX 6IP • Facom side cutter 416E • Facom T5 driver SP.14032 • Facom T6 driver SP.14033 • Facom slot screwdriver AEF. 2x35.E • Wetec tweezers 7abb SA-ESD • Wetec tweezers 22 SA-ESD • Wetec tweezers 13 SA-SMD ESD • Wetec tweezers PSF SA-ESD • Wetec ESD brush E1211 • Kaiser Fototechnik airbrush 6315 • Wetec dental tool DEM83266/0 • RS Components Scissors 323-5732

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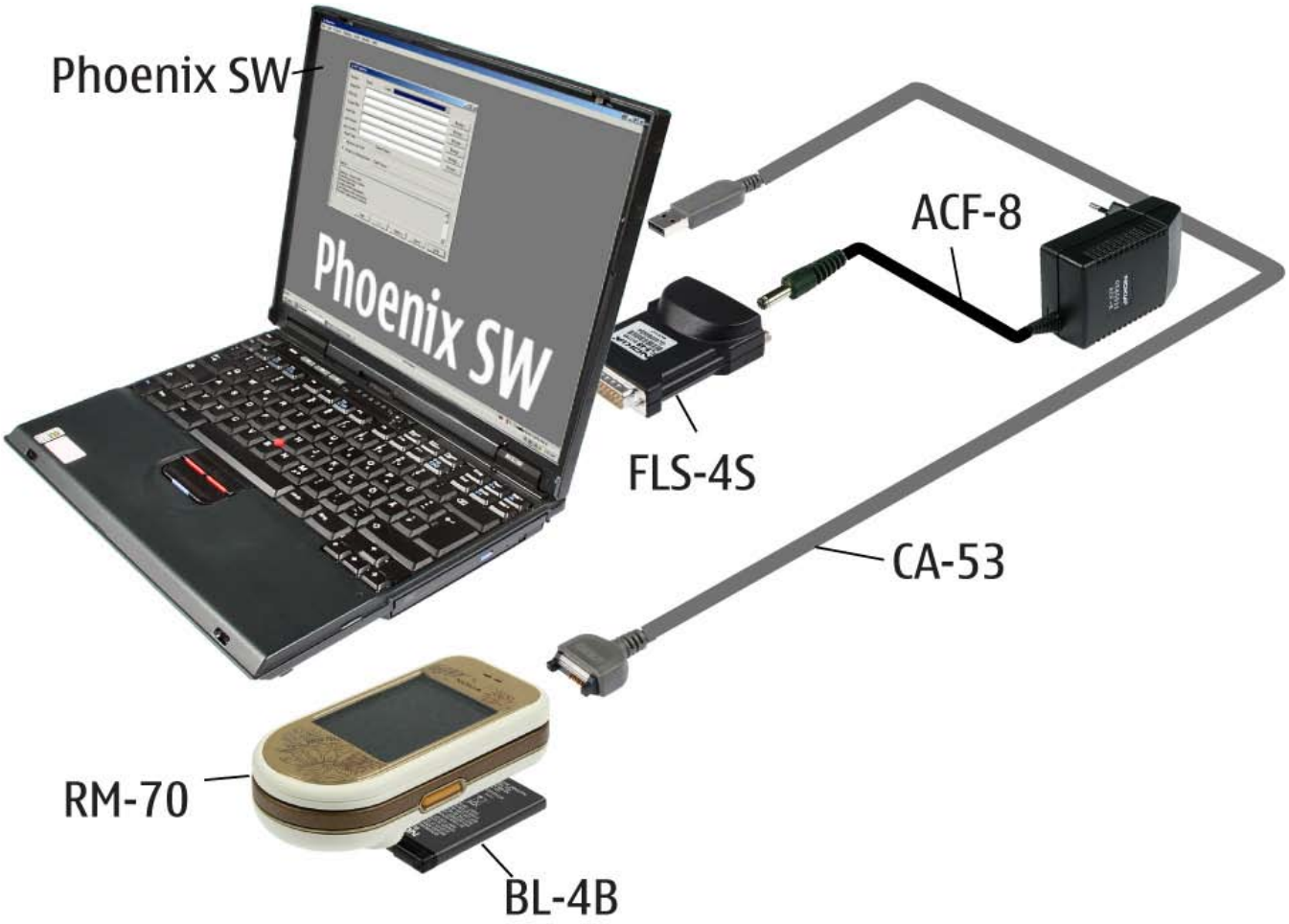
8. SW-UPDATE

Flash Concept – (Point of Sales)

To use FLS-4S Flash Dongle you have to follow the user guide inside the sales package. Please check always for the latest version of flash software, which is available on
NOKIA Online.



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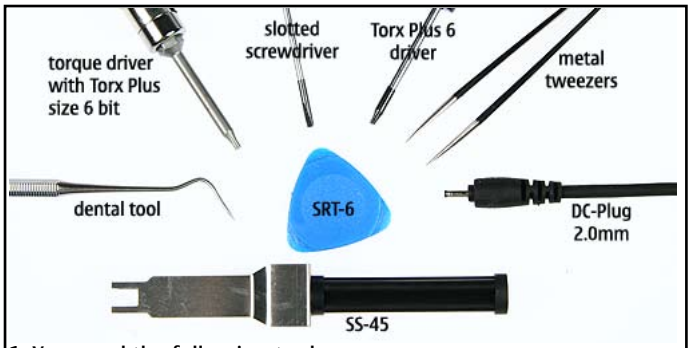
9. DISASSEMBLY INSTRUCTION (UPPER BLOCK)



1. You need the following tools.

2. Always protect all windows with a plastic film.

3. Open the **E-COVER** and remove the battery, if it is inserted.

4. Turn the **UPPER BLOCK** to 90° from the **LOWER BLOCK**. Start opening the **A-COVER ASSY** at the round side with the SRT-6.

5. Slide the SRT-6 around the covers and keep the gap open. Unlock the retaining clips separately.

6. Go ahead near the **SWIVEL** area.

7. This is the last clip to be unlocked.

8. Now, separate **A-COVER** and **B-COVER**.

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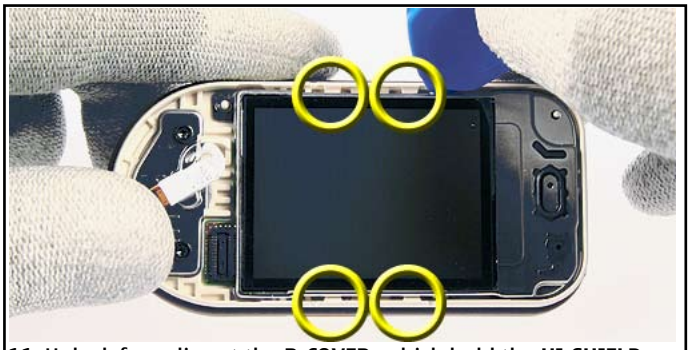
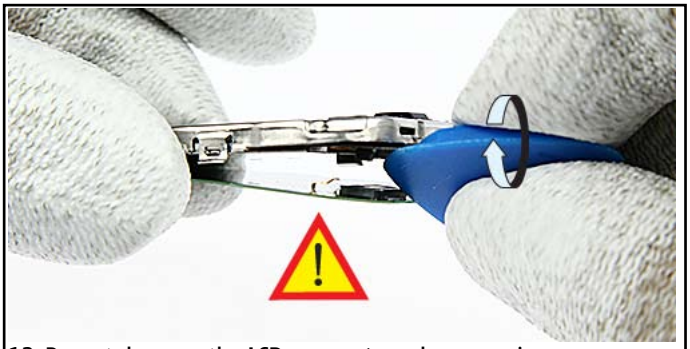
9. Also, protect the inner side of the window with a plastic film.

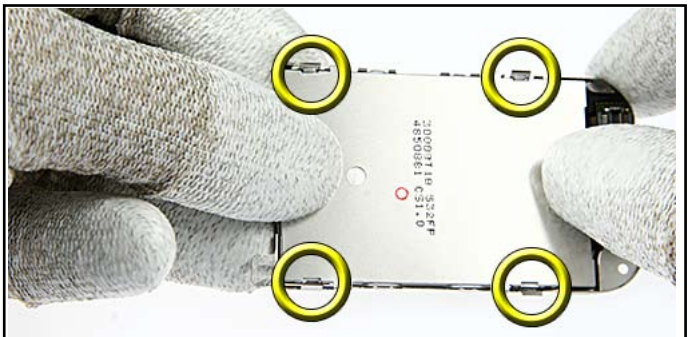
10. Carefully unlock the **BOARD TO BOARD CONNECTOR**.



11. Unlock four clips at the **B-COVER**, which hold the **UI-SHIELD** into the **B-COVER**.

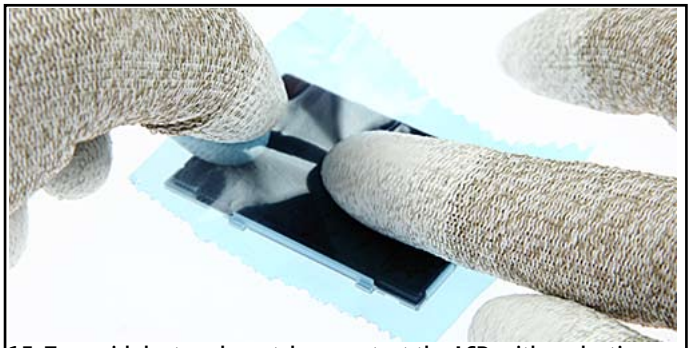


12. Do not damage the **LCD connector** when opening.

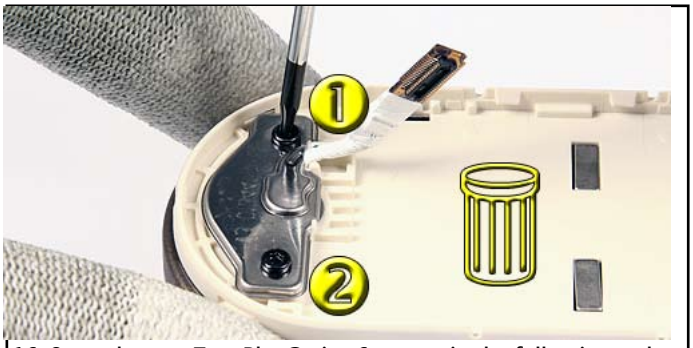


13. Open the four clips which hold the **LCD** into the **UI-SHIELD**. Do not bend the clips too much to keep the part reusable for assembly.

14. Lift out the **LCD**.



15. To avoid dust and scratches, protect the **LCD** with a plastic film.



16. Open the two Torx Plus® size 6 screws in the following order.
For assembly use the reverse order and apply a torque of 25 Ncm +/- 2Ncm. Always use new screws!

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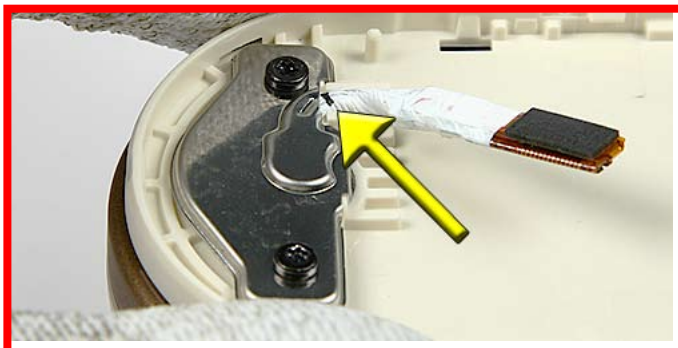
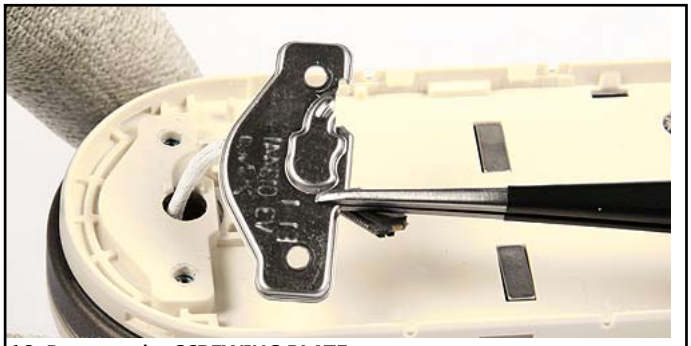


17. For Assembly only:
Pay attention to the right length of the **COAX CABLE** and place the marking at the edge of the **SCREWING PLATE**.



18. Remove the **SCREWING PLATE**.

19. Separate the **UPPER BLOCK** from the **LOWER BLOCK**.

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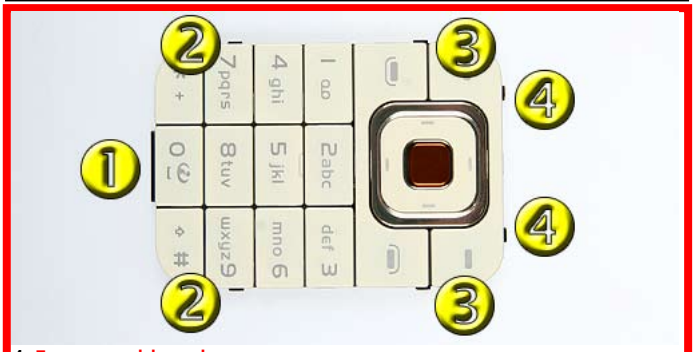
10. DISASSEMBLY INSTRUCTION (LOWER BLOCK)

1. Always protect all windows with a plastic film.

2. Remove the **E-COVER**.

3. If you need to change the **KEYMAT**, it is also possible at a closed **LOWER BLOCK**. Remove the **KEYMAT** starting exactly from the point shown.



4. For assembly only:
When assembling, start placing the **KEYMAT** at button “0” and move forward to the upper side.

5. For assembly only:
Start placing the KEYMAT at the marked positions.

6. For assembly only:
Be sure to have all clips locked properly.

7. Open the two Torx Plus® size 6 screw in the following order.
For assembly use the reverse order and apply a torque of 25 Ncm +/- 2Ncm.

8. Open the middle snaps of the **D-COVER**, using a slotted screw-driver.

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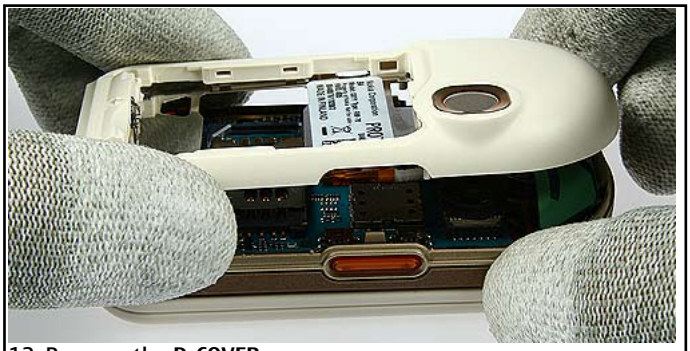
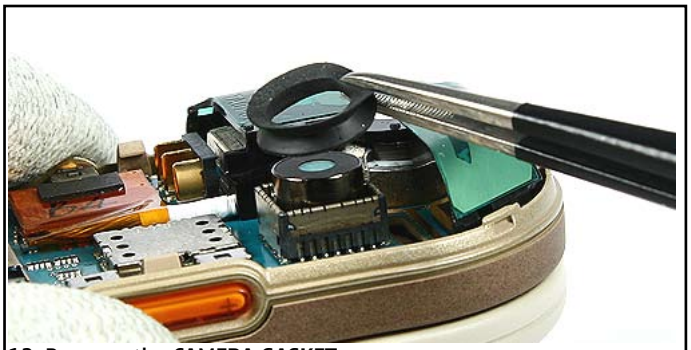
9. Use the SRT-6 to open the snaps of the **D-COVER ASSY at the right side. Then ...**

10. ... at the top side and ...

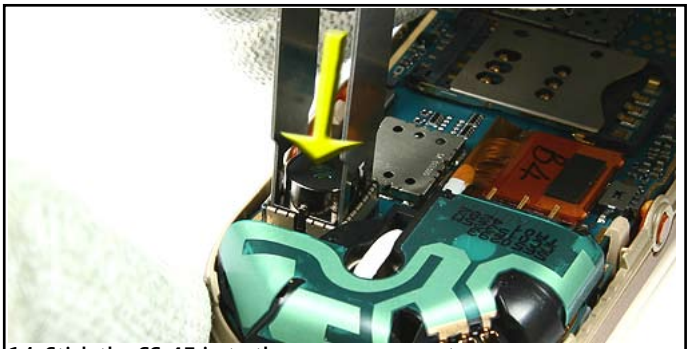
11. ... at the left side.



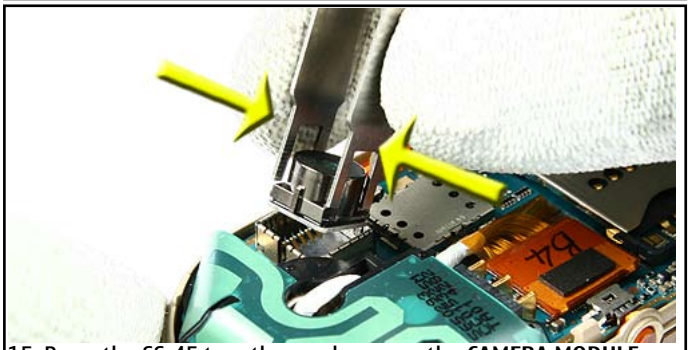
12. Remove the **D-COVER**.



13. Remove the **CAMERA GASKET**.



14. Stick the **SS-45** in to the camera connector.



15. Press the SS-45 together and remove the **CAMERA MODULE**.

16. For assembly only:
Take care of the right positioning of the **CAMERA MODULE**.

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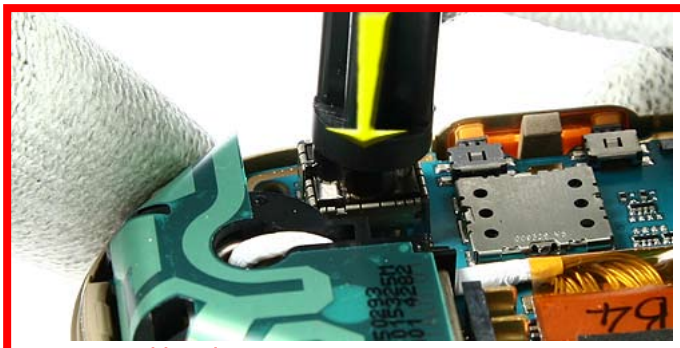
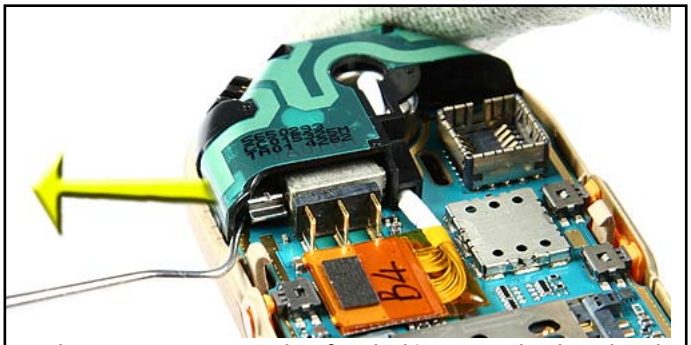
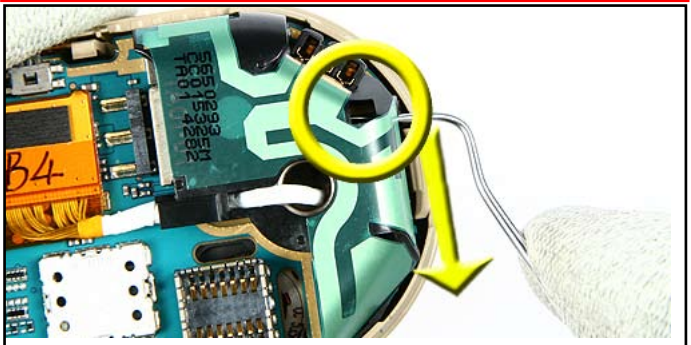


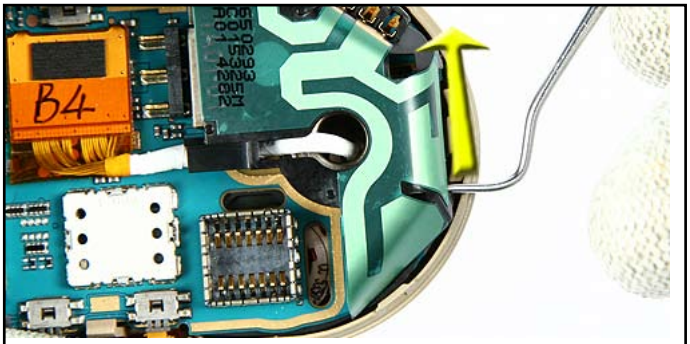
17. For assembly only:
Use the opposite side of the SS-45 to lock the **CAMERA MODULE** properly.



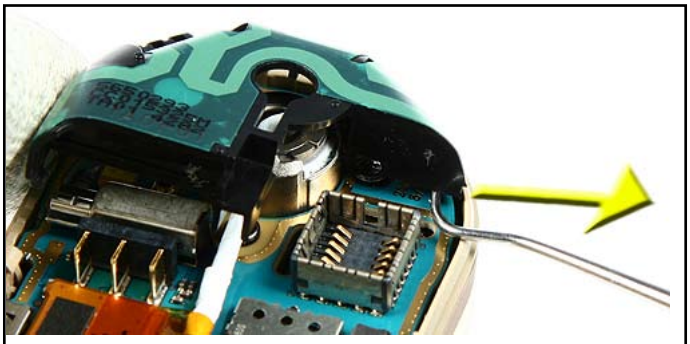
18. The **ANTENNA MODULE** has four lockings. Use the dental tool to open the first lock.



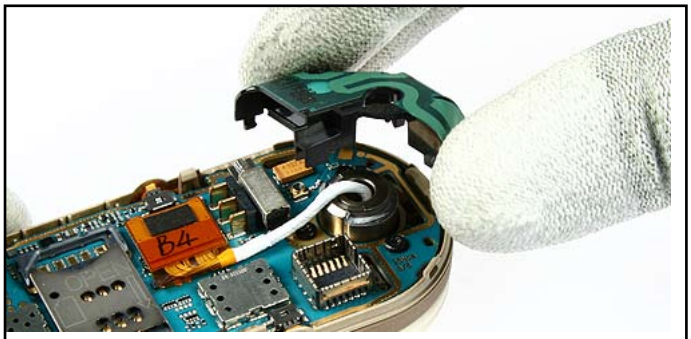
19. Stick the dental tool under the **ANTENNA MODULE** (The pike of the dental tool is visible in the marked hole). Now pull the tool to the shown direction.



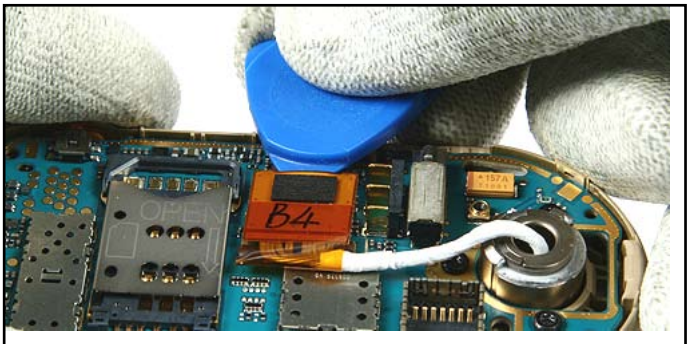
20. Do the same as before (the pike is in this case not visible) and pull in the opposite direction.



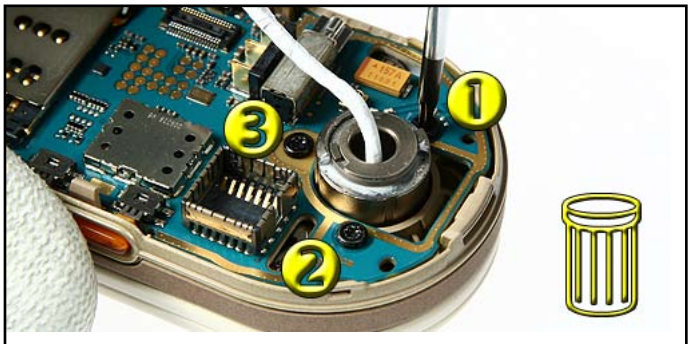
21. Now unlock the last snap.



22. Remove the **ANTENNA MODULE**.



23. Carefully unlock the coax connector with SRT-6.



24. Unsrew the three **SWIVEL** screws Torx Plus® size 6 in the following order. For assembly use the reverse order and apply a torque of 25 Ncm +/- 2Ncm. Always use new screws!

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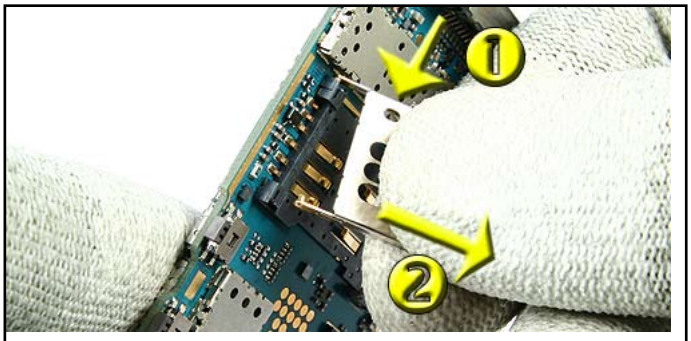
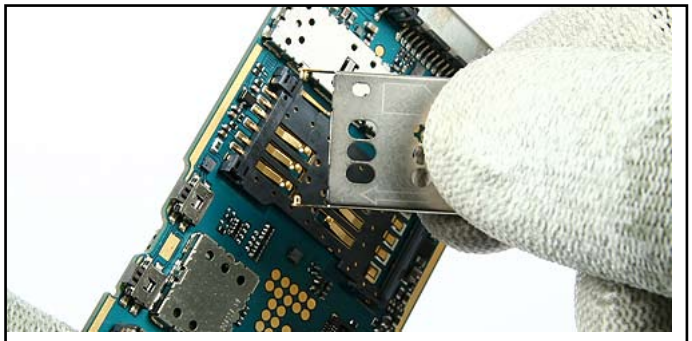
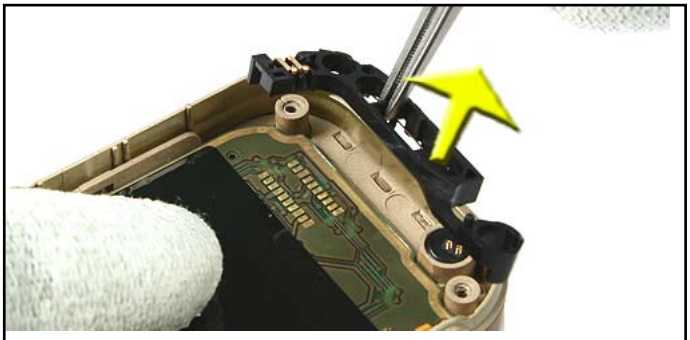
25. Separate the **ENGINE MODULE** from the **C-COVER ASSY.**



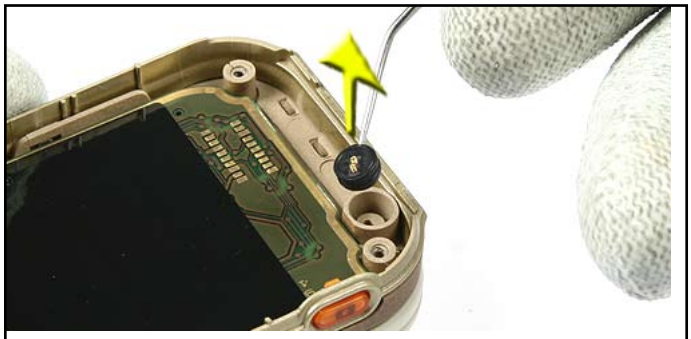
26. To remove the **SIM FLAP** start in the order shown.



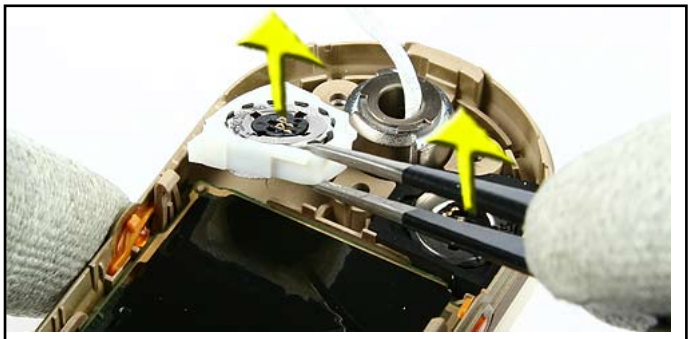
27. Now remove the other side.



28. Remove the **BLUETOOTH ANTENNA** with tweezers.

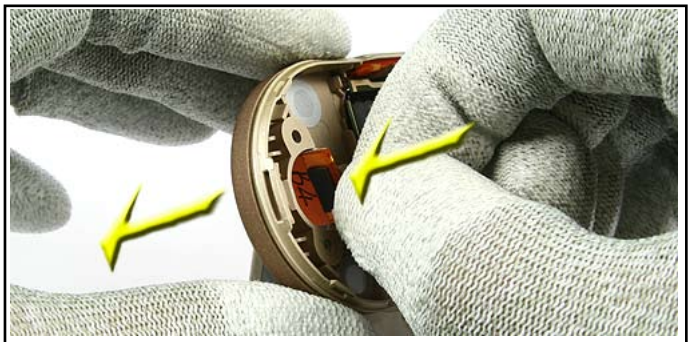


29. Remove the **MICROPHONE** with the dental tool.



30. Remove both **IHF SPEAKERS** with tweezers.

31. Separate the **C-COVER ASSY** from the **UPPER BLOCK**.



32. Fit the **COAX CABLE** to the hole to remove the **C-COVER ASSY** completely from the **UPPER BLOCK**.

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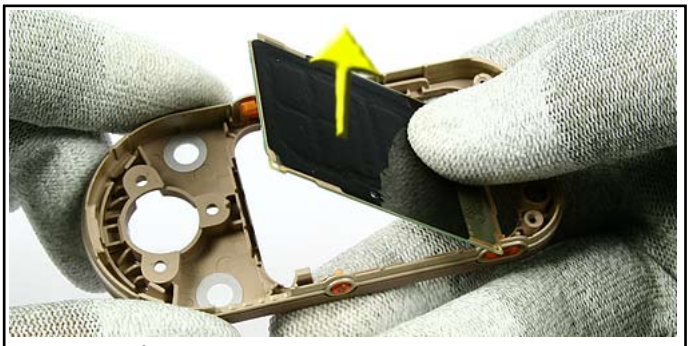
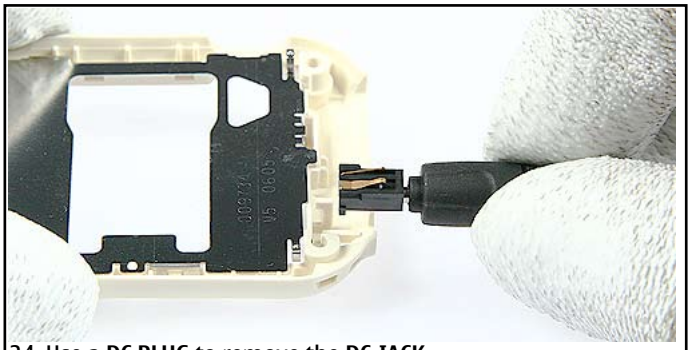
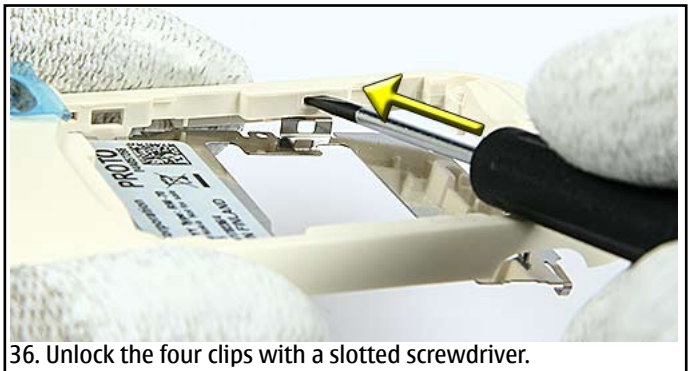


33. Remove the **PWB KEYMAT ASSY**.



34. Use a **DC PLUG** to remove the **DC-JACK**.

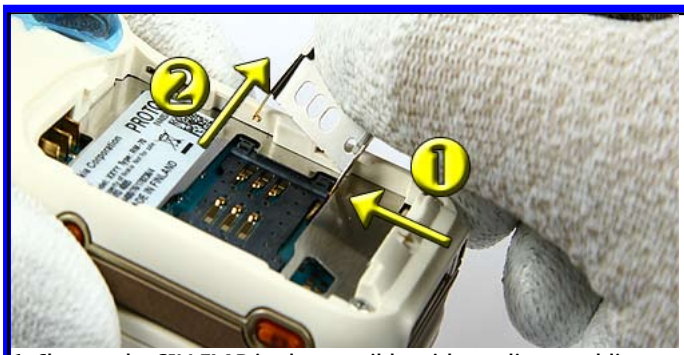
35. There are five clips, holding the **LABEL COVER** into the **D-COVER**.



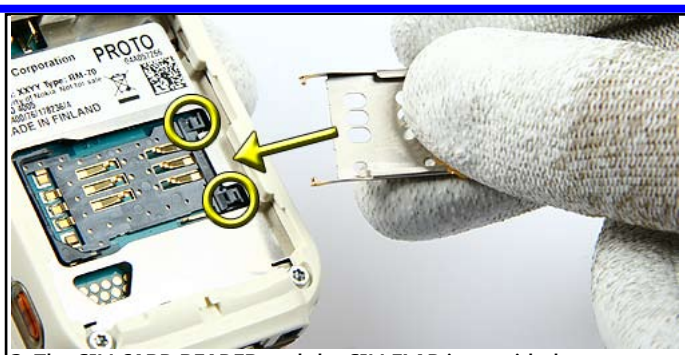
36. Unlock the four clips with a slotted screwdriver.

37. Turn around the **D-COVER** and unlock the last clip.

11. EXCHANGE INSTRUCTION FOR SIM FLAP ONLY



1. Change the **SIM FLAP** is also possible <u>without</u> disassembling the **LOWER BLOCK**. Open the **E-COVER**, remove the battery if necessary and follow the shown order.



2. The **SIM CARD READER** and the **SIM FLAP** is provided as one spare part. Separate it and assemble the **SIM FLAP** as shown.

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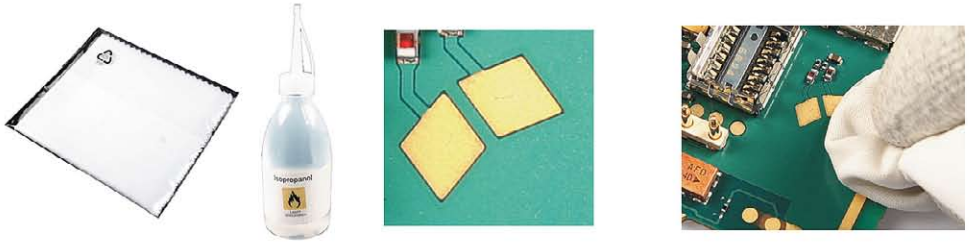
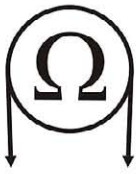
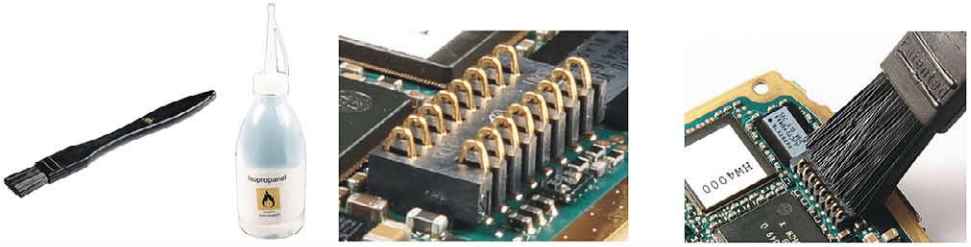
12. LEGEND FOR QUICK TROUBLE SHOOTER

Legend for Quick Trouble Shooter

This legend is valid for all parts of the Quick Trouble Shooter

Follow the steps until the problem is solved. If this doesn´t help, you are not authorized to go forward.	
Fault symptom	The start point of repair activities regarding the appeared fault symptoms.
	Only marked components (e.g. I002) can be replaced.
	<u>Cloth usage:</u> Check pads or contacts for optical and mechanical condition particularly regarding to corrosion. Clean it if necessary. 
	Measure component for electrical functionality and change, if needed. (Level 2 only)
	<u>ESD Brush usage:</u> Check pads or contacts for optical and mechanical condition particularly regarding to corrosion. Clean it if necessary. 
	No more action possible - send product to the appropriate service supplier with higher service level.

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13. QUICK TROUBLE SHOOTER PART 1

Will be implemented soon

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14. QUICK TROUBLE SHOOTER PART 2

Will be implemented soon

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15. QUICK TROUBLE SHOOTER PART 3

Will be implemented soon

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16. CAMERA GONOGO TEST

Before starting the GoNoGo test, check that camera window is clean. If not, clean the window with cloth.

Test unit

- Open the phone by turning the upper part 180° to the lower part
- Press the receiver button to reach the Home Menu
- Select Menu
- Select **Media**
- Select **Camera**
- Press **Capture** or use the **Camera Key** to take a photo
  This Image will be saved to Gallery into the Photos folder automatically.
  Test was successful, if the Image appears on your Display. The camera is ok.
- Select **Options** within 3sec
  (After 3 seconds you have to press **Option**; choose **Open Gallery**; select **Images**; select **Options)**
- Select **Delete**
- Select **Yes**
- Press the receiver button to reach the Home Menu
- Close the phone by turning back the upper part

If the test is failed see Quick Trouble Shooter.

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17. BLUETOOTH & INFRARED TEST

Bluetooth test
You need another Bluetooth device (e.g. 6230) to do a GoNoGo test.
Make sure that Bluetooth is activated in the reference unit. The distance of the devices should be not more than 5m from each other.

Bluetooth connection

Reference unit, Bluetooth /infrared activated

Test unit

Settings on the test unit:

- Open the phone by turning the upper part 180° to the lower part
- Press the receiver button to reach the Home Menu
- Select **Names** and select **Search** for an entry
  If phone and SIM memory is empty, create one new entry.
- **Select** an entry and select **Details**
- Select **Options**
- Select **Send business card**
  Select **Via Bluetooth**
  Search window appears and shows all Bluetooth units in range.
  Choose one unit and press **Select**
  Press **Accept** on the Reference unit.
  Test was successful, if you get the message **"Business card received"** on the Reference unit.
- Close the phone by turning back the upper part

Note: If the Bluetooth is activated, switch it off!

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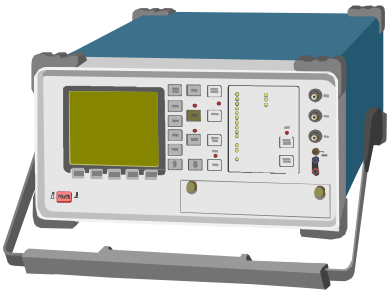
18. GONOGO TEST

After the optical check, a GoNoGo test has to be carried out if the unit has been unscrewed to guarantee the functionality of the phone.

Please refer to the actual information on NOKIA Online. When using delivered tester support files, take care of the right setup according to the tester type and product type.
Please refer to "Recommended Service Equipment" on NOKIA Online.



Mobile Phone Tester

19. BATTERY TEST

A battery tester lets you test the capacity of NOKIA batteries.

Please refer to the actual information on NOKIA Online.

http://www.astratec.co.uk/

http://www.cadex.com/

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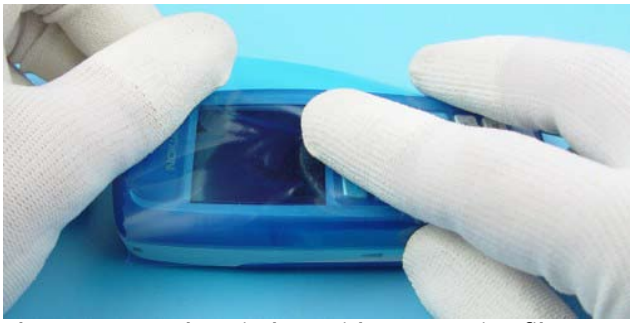
20. FORWARDING OF REPAIRS

When it is necessary to forward of repairs to appropriate service supplier with higher service level we recommend using the offered swap phone cartons as described in Spare Parts SB-004.



Always Protect the window with a protection film.

Put the unit under the stretch film.

Add repair documentation e.g. filled-in service note into the swap carton.

Fold the swap carton as shown in Spare Parts SB-004.

There are two different sizes of swap cartons for common mobile phones.

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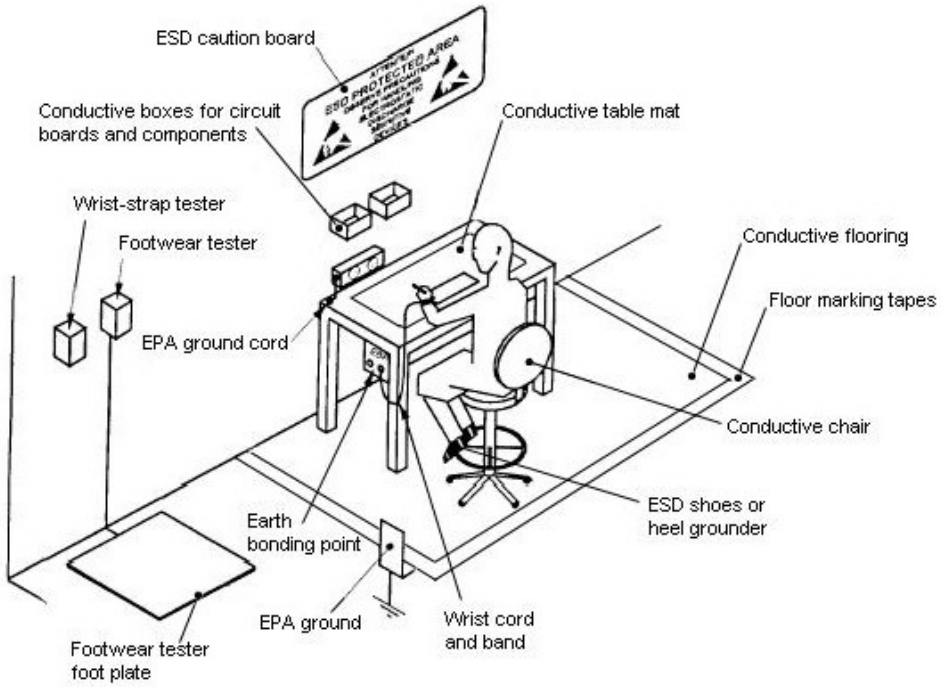
21. ESD PROTECTION REQUIREMENTS

Please refer to the NOKIA Online document Service Supplier Requirements in folder General instructions.



USE Conductive bags and boxes
USE ESD compatible service tools
USE Conductive wastebaskets
USE ESD gloves when handling PWBs/PCBs
USE Cleaning material without changing el. Characteristics
USE Grounded service equipment, i.e. soldering station
USE ESD clothes such as coat or frock

NO Smoking
NO Drinking
NO Eating
NO Dust
NO Useless Items
NO Normal pressured air for cleaning modules/ displays

The video covers general issues concerning Electro-Static Discharge (ESD)

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